

TAXONOMIC REMARKS ON *SCHIZOBOPYRINA*
MARKHAM, 1985, WITH THE DESCRIPTION OF
S. BRUSCAI (CRUSTACEA: ISOPODA: BOPYRIDAE)

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Abstract.—*Schizobopyrina striata* (Nierstrasz & Brender à Brandis, 1929) that infests *Thor algicola* Wicksten, 1987 is reported from the Golfo de California, México. The morphology of the female examined agrees well with that of the lectotype female from San Diego Bay, California. *Schizobopyrina bruscai* is described from a single adult female collected in Bahía Concepción, Baja California Sur, México. This species is a parasite of a new species of *Thor*. It differs from other species of *Schizobopyrina* principally in the pleomeres and pleotelson morphology. In addition, we suggest *Bopyrina platylobata* Bourdon, 1983, from Seram, Seleman Bay and Queensland, should be included within *Schizobopyrina*, and *S. lobata* Bourdon & Bruce, 1983, from Queensland, should be redescribed in order to determine whether this species is correctly placed within this genus.

Resúmen.—El isópodo bopírido *Schizobopyrina striata* (Nierstrasz & Brender à Brandis, 1929) se registra como parásito del camarón carídeo *Thor algicola* Wicksten, 1987 en el Golfo de California. La morfología de la hembra corresponde a la del lectotipo colectado en San Diego Bay, California, EEUU. *Schizobopyrina bruscai* se describe en base a un espécimen hembra adulto que se colectó en Bahía Concepción, Baja California Sur, México. Esta especie es parásita de una especie indescrita de *Thor*. Difiere de otras especies del género *Schizobopyrina* principalmente en morfología de los pleómeros y pleotelson. Adicionalmente se sugiere que *Bopyrina platylobata* Bourdon, 1983, de Seram, Bahía de Seleman y Queensland, debe ser asignada al género *Schizobopyrina*, y que *S. lobata* Bourdon & Bruce, 1983, de Queensland, necesita redesccribirse a fin de establecer si su inclusión a este género es correcta.

Markham (1985) proposed the genus *Schizobopyrina* to include 10 species that had been assigned formerly to the closely allied genus *Bopyrina* Kossman, 1881. *Schizobopyrina* has a maxilliped palp, elongate second through fifth oostegites, and at least lateral separation of the six pleomeres. These features contrast with the lack of maxilliped palp, tiny oostegites 2-5 and fusion of pleomeres on the short side in *Bopyrina*. Two species of *Schizobopyrina* have been recorded from American waters only. The type species, *Schizobopyrina urocaridis*

(Richardson, 1904), was collected from North Carolina, western Florida, and Belize, while *S. striata* (Nierstrasz & Brender à Brandis, 1929) has been recorded only from San Diego Bay, California (Nierstrasz & Brender à Brandis 1929, Markham 1985).

In the present note we extend the known distribution, report a new host and give additional morphological information for *S. striata*, a species that apparently has not been collected since its description. Concomitantly, a new northeastern Pacific species of *Schizobopyrina* is described.

These species records increase from 12 to 14 the number of bopyrid species reported from the Mexican Pacific (Campos & Campos 1989). In addition, some comments on taxonomy of the Australian species *S. lobata* Bourdon & Bruce, 1983 and *Bopyrina platylobata* Bourdon, 1983 are included. Specimens of *S. striata* and *Schizobopyrina bruscai* described herein have been deposited in the Collection of Invertebrates, Escuela Superior de Ciencias, Universidad Autónoma de Baja California. The terms posteroventral border of head and spur described by Markham (1985) are respectively herein referred as barbula and plectron in agreement with Markham (1988). Information recorded in Table 1 was obtained from the below-noted descriptions and papers of Chopra (1923); Nierstrasz & Brender à Brandis (1923); Shiino (1933, 1939a, 1939b, 1942); Bourdon (1983); Bourdon & Bruce (1983); and Markham (1985).

Schizobopyrina striata

(Nierstrasz & Brender à Brandis, 1929)

Figs. 1, 2

Bopyrina striata Nierstrasz & Brender à Brandis, 1929:40–42, figs. 51–53.

Schizobopyrina striata.—Markham, 1985: 46.

Distribution.—San Diego Bay, California (type locality); upper Golfo de California (new record, herein).

Hosts recorded.—Caridea-Hippolytidae: *Hippolyte californiensis* Holmes, 1895.

Material examined.—One female, Puertecitos, Golfo de California, Baja California, km 72 road San Felipe-San Luis Gonzága 30°30'N, 114°40'W, 23 May 1986, lower midlittoral, E. Campos coll.

New host.—Rubén Ríos (pers. comm.) noted that the host of *S. striata* agrees well with description of *T. algicola* Wicksten, 1987; however, he suggested that Wicksten's species should be considered as a junior synonym of *T. manningi* Chace, 1972.

A discussion of this topic will be published by R. Ríos (in prep.).

Description.—Female (Fig. 1A, B). Length 4.0 mm, maximum width 2.0 mm, head length 0.8 mm, pleon length 0.9 mm, body axis distortion 126°.

Head roughly triangular, separated from pereon by a deep groove. Large and indistinctly set-off frontal lamina extending into sub-triangular points and notched on shorter side of body; frontal lamina with medial extensions. Antennae tiny, obscure. Maxilliped (Fig. 2A) with setose palp well developed, articulating with margin (Fig. 2B). Barbula medially produced, with two blunt projections on each side (Fig. 2C). Seven well defined pereomeres dorsally and laterally, inconspicuous ventrally. Coxal plates on pereomeres 1–4 of both sides; dorsolateral bosses on pereomeres 1–4 of long side. Pereopods subequal, increasing slightly in length posteriorly, seventh pereopod with bilobed and pseudoarticulated merus (Fig. 2D). First pair of oostegites asymmetrical (Fig. 2E); right one with falcate posterolateral point, left one with larger and sickle-shaped posterolateral point; internal ridges of both first oostegites unadorned.

Pleon with 5 medially fused pleomeres and pleotelson, latter deeply arcuate and embedded in the fifth pleomere. Four pairs of lanceolate uniramous pleopods; ventral surface of lateral plates of long side bearing tuberculiform projections decreasing posteriorly, conical on first four pleomeres, rounded on fifth one. On short side such projections are not evident. No uropods.

Remarks.—*Schizobopyrina striata* is the only species of this genus recorded from the East Pacific (Markham 1985). It was described by Nierstrasz & Brender à Brandis (1929) from specimens collected in San Diego Bay, California. There are no additional published records to our knowledge. Morphologically our female specimen (Fig. 1A, B) is almost identical to that described and figured in 1929 by Nierstrasz & Brender à



Fig. 1. *Schizobopyrina striata* (Nierstrasz & Brender à Brandis, 1929): A, C, Female ventral view; B, E, Female dorsal view; D, Male. (C-E redrawn from Nierstrasz & Brender à Brandis 1929).

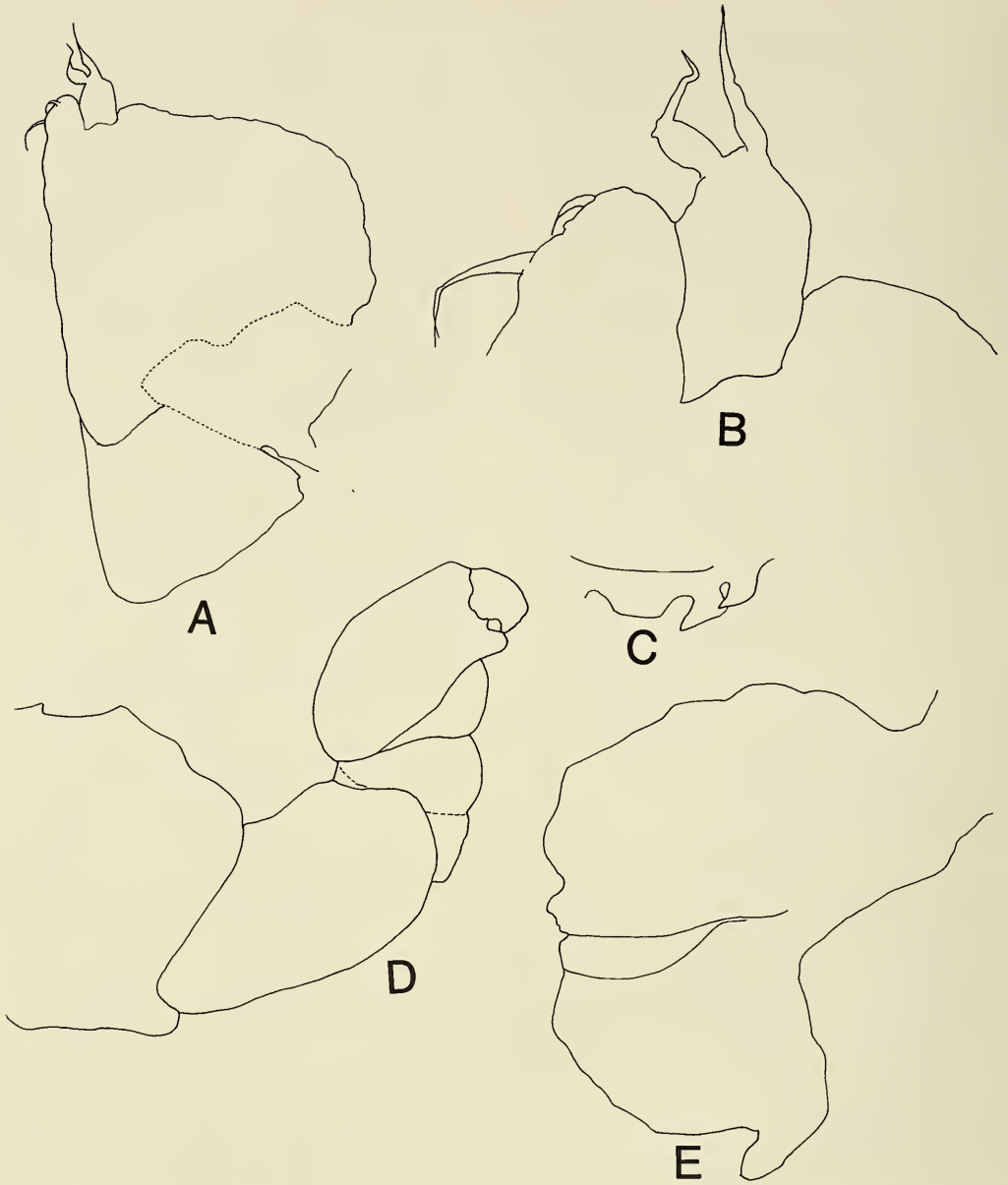


Fig. 2. *Schizobopyrina striata* (Nierstrasz & Brender à Brandis, 1929), Female: A, Maxilliped; B, Maxilliped palp; C, Barbula; D, Pereopod 7; E, Left oostegite 1.

Brandis (fig. 1C, D). Differences occur in the body distortion (126° in our specimen, 85° in the lectotype); the festoons of the frontal lamina (lacking in the lectotype); and the degree of pleonal fusion (more complete in our female). Since we did not collect a

male specimen, the original description and figure given by Nierstrasz & Brender à Brandis (1929) is reproduced here (Fig. 1E). The features that they recorded are the following: "mit Augen; Pigmentierung wie auf def Abbildung; Grenze zwischen Cephalon und

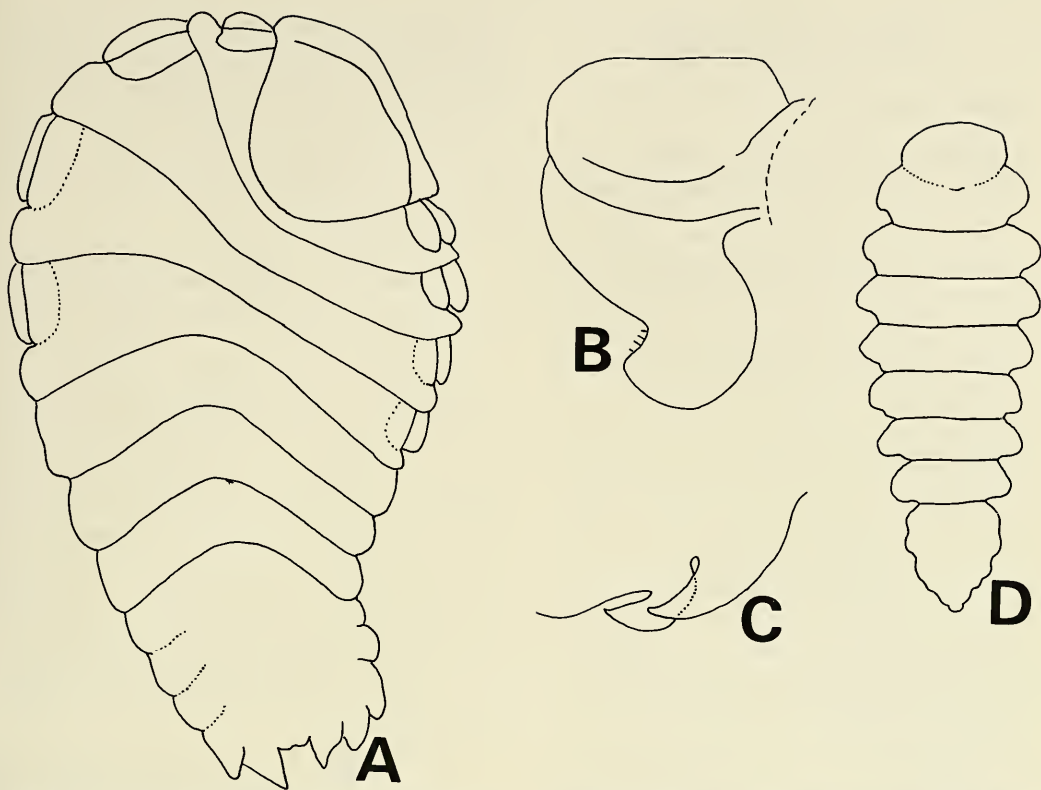


Fig. 3. *Schizobopyrina platylobata* (Bourdon, 1983): A, Female dorsal view; B, Right oostegite 1; C, Barbula; D, Male dorsal view (all redrawn from Bourdon 1983).

Thoracomer II nicht deutlich; Pleon mit kleinem caudalen Fortsatz; Pleomere und Pleotelson verwachsen, I und II aber seitlich angedeutet" (= with eyes; pigmentation as in the illustration. Border between cephalon and first pereomere not clear; pleon with a small caudal process; pleomeres and pleotelson fused, however I and II indicated laterally).

Schizobopyrina platylobata
(Bourdon, 1983), new combination

Fig. 3

Restricted synonymy:

Bopyrina platylobata Bourdon, 1983:867–869, fig. 13a–d. — Bourdon & Bruce, 1983: 99.

Remarks. — Based on the original descriptions and figures recorded in Bourdon (1983) we suggest this species should be included within *Schizobopyrina*. The female (Fig. 5A–C) has (1) the frontal lamina evident, (2) the maxilliped with palp, (3) the barbula with two lanceolate projections, (4) dorsolateral bosses and coxal plates on pleomeres 1–4, (5) elongated oostegites 2–5, and (6) five pairs of laterally indicated pleomeres and pleotelson. The exclusion of *S. platylobata* from *Bopyrina* Kossmann 1881 is because females in this genus have a maxilliped without palp, tiny oostegites 2–5 and complete pleomeral fusion on the short side of body. These features are lacking in *S. platylobata*. The male of this species (Fig. 3D) is almost identical to those described within *Schizobopyrina*.

Schizobopyrina(?) lobata
Bourdon & Bruce, 1983

Restricted synonymy:

Bopyrina lobata Bourdon & Bruce, 1983:
100–101, fig. 3a–d. — Markham, 1985:46.

Remarks. — Bourdon & Bruce (1983) described this bopyrid and pointed out that the generic position of this species will remain uncertain. Subsequently Markham (1985) excluded this species from *Bopyrina* and included it within *Schizobopyrina*. In agreement with Markham's first action we considered that this isopod is not a species of the genus *Bopyrina*; however, we found in the original description given by Bourdon & Bruce (1983) a partial support to Markham's second action. According to Bourdon & Bruce (1983) *S.(?) lobata* has a maxilliped apparently without palp (close to *Bopyrina*), the barbula with single pair of poorly developed projections (like *Bopyrina*) and lack of dorsolateral bosses and coxal plates (similar to *Bopyrina*). In contrast, *Schizobopyrina* possesses a maxilliped palp well defined, the barbula with two pairs of projections, and with dorsolateral bosses or coxal plates or both on pereomeres 1–4. However, the species *lobata* agree well with *Schizobopyrina* in other features, e.g., oostegites 2–5 elongate, pleomeres laterally indicated, frontal lamina visible. The above-mentioned similarities and dissimilarities may suggest this species is intermediate between *Schizobopyrina* and *Bopyrina*, but a redescription is necessary to resolve the systematics of this enigmatic species.

Schizobopyrina bruscai, new species
Figs. 4, 5

Material examined. — One female, holotype, Bahía Concepción, Golfo de California, south side of El Coyote beach, Baja California Sur, México, 26°44'N, 111°55'W, 2 m depth, 6 Oct 1981, Rubén Ríos coll.

Host. According to R. Ríos (pers. comm.) this host is conspecific with *Thor spinosus*

recorded by Wicksten (1983) [not Boone 1935]. Ríos (pers. comm.) has found this cariden is an undescribed species of *Thor*.

Description. — Female (Fig. 4A, B). Length 2.2 mm, maximal width 1.1 mm, head length 0.5 mm, pleon length 0.7 mm, body axis distortion 85°.

Head distinct, moderately set into pereon; frontal lamina large, well differentiated from head, extended into lateral lobules, margin on short side of body slightly concave and notched. Antennae inconspicuous; barbula (Fig. 5A) medially produced, with 2 blunt projections. Maxilliped palp large, setose and obscurely articulated (Fig. 5B), plectron projecting, large and slender (Fig. 4C). Pereomeres distinctly separated dorsally and laterally, much less so ventrally. Coxal plates on pereomeres 1–4 of both sides. Dorsolateral bosses on pereomeres 1–4 of long side. Pereopods subequal, increasing a little posteriorly, each of the 7 articles well defined.

First oostegites asymmetrical, left one with posterolateral point short, slender and slightly hooked (Fig. 4D); right one large, broad and hook-shaped (Fig. 5C) internal ridge of both first oostegites slightly ornamented, with setae on distomedial margin. Oostegites 2–5 slender, fifth one larger.

Pleon (Fig. 5D) of 4 distinct pleomeres and pleotelson that are obscurely separated medially; pleotelson notched in middle; 4 pairs of leaf-like and uniramous pleopods diminishing in length posteriorly, first pair suboblong, last three pairs subovate. No uropods.

Distribution. — Known only from the type locality, El Coyote beach, Bahía Concepción, Baja California Sur, México.

Etymology. — This species is named in honor of Richard C. Brusca, for his scientific contributions to the knowledge of the marine fauna of the Golfo de California.

Remarks. — Markham's (1985) diagnosis of the genus *Schizobopyrina* was based on the type species and took into account all 10 species that he included within this ge-

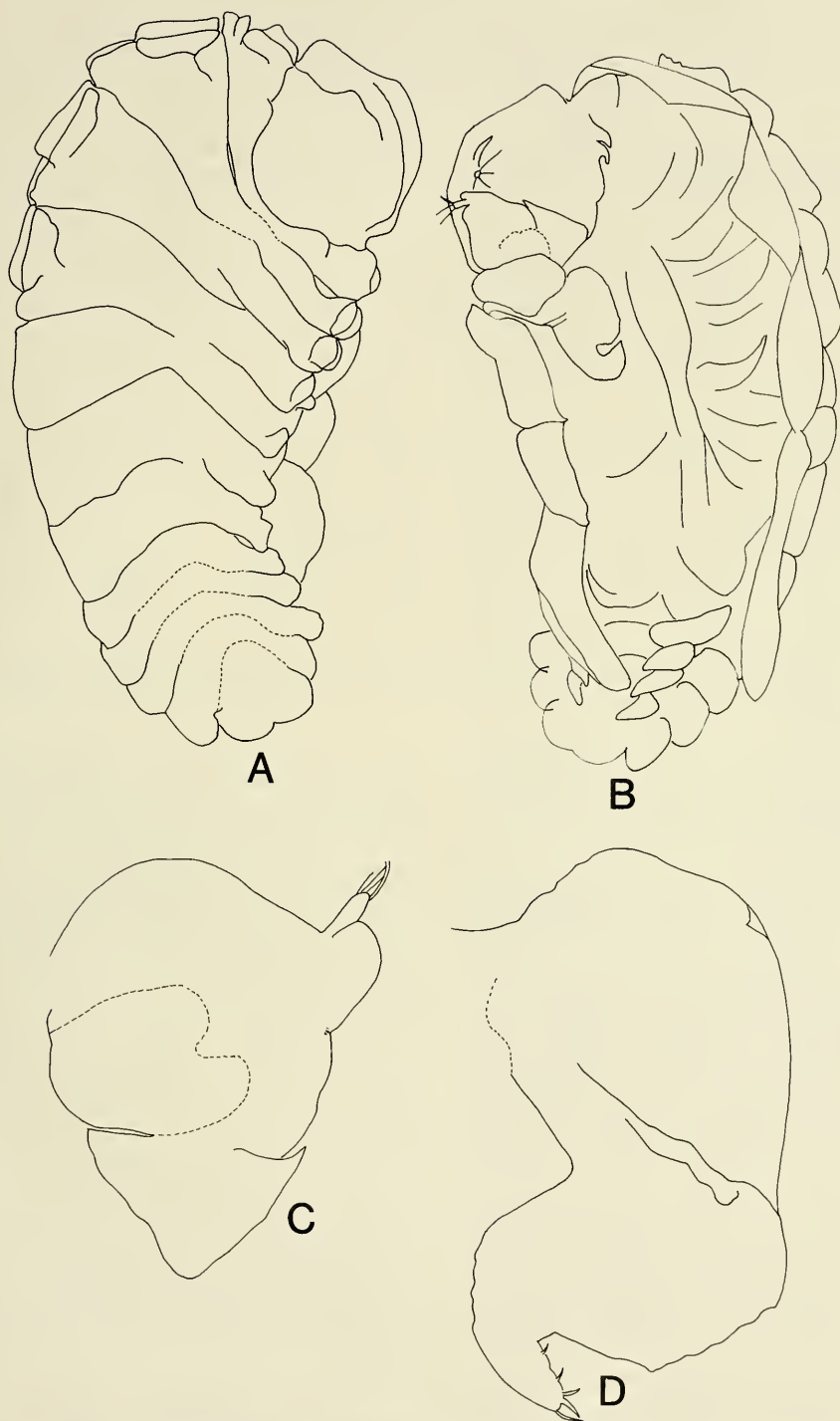


Fig. 4. *Schizobopyrina bruscai*, n. sp., Female holotype: A, Dorsal view; B, Ventral view; C, Maxilliped; D, Left oostegite 1.

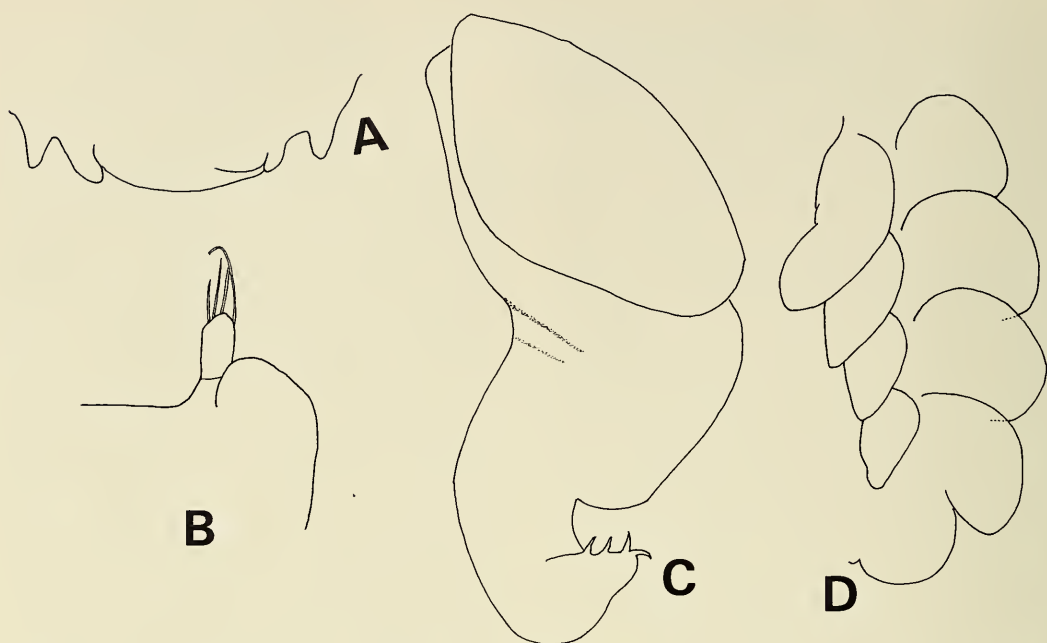


Fig. 5. *Schizobopyrina bruscai*, n. sp., Female holotype: A, Barbula; B, Maxilliped palp; C, Right oostegite; D, Pleon, ventral view.

nus. *Schizobopyrina bruscai* is similar to another congener in its frontal lamina, maxilliped palp, dorsolateral bosses, shape and number of oostegites and number of pleopods. Comparison of the *Schizobopyrina* species, including *S. bruscai*, is recorded in Table 1. *Schizobopyrina bruscai* principally differs from *S. amakusaensis* (Shiino, 1939) [from Amakusa, Kyusyu, Japan], *S. andamica* (Chopra, 1923) [from India and Japan], *S. brachytelson* (Nierstrasz & Brender à Brandis, 1923) [from Dangar, Besar, Saleh Bay], *S. gracilis* Chopra, 1923 [from India and Japan], and *S. lobata* (Bourdon & Bruce, 1983) [from off Caloundra, Queensland], in that the first species has the cephalon separated from the first thoracic somite (Fig. 4A), instead of fused as recorded in the last six species (Table 1). Furthermore, *S. bruscai* possesses 4 pleomeres and pleotelson, while these species, except *S. amakusaensis*, have 5 pleomeres and pleotelson. This last pleomeral trait is also observed in *S. cochiniensis* (Chopra, 1923) [from Cochin, India], *S. platylobata* (Bourdon, 1983) [from

Seram, Seleman Bay], *S. striata* (Nierstrasz & Brender à Brandis, 1929) [from California and Golfo de California, México] and *S. urocaridis* (Richardson, 1904) [from Atlantic coast of U.S. and Belize], and represents the most evident difference between these last four species and *S. bruscai*. Additional differences are recorded in Table 1.

Schizobopyrina bruscai differs from *S. miyakei* Shiino, 1939, from Palao and Australia, in the margin of pleotelson, bilobed-symmetrical in *S. bruscai*, and from obliquely-continuous to bilobed-asymmetrical in *S. miyakei*. Additionally, *S. bruscai* has the cephalon and first thoracic somite well separated by a deep groove, instead of fused with suture line indicated by a shallow groove as in *S. miyakei*. With regard to the diagnosis of *Schizobopyrina*, Markham (1985) pointed out that this genus possesses six distinct pleomeres (= 5 pleomeres and pleotelson). *S. amakusaensis*, *S. bruscai*, and *S. miyakei* have 4 pleomeres and pleotelson. This pleonal variation is analogous to that recorded in other genera of Bopyridae

Table 1.—Comparison of selected diagnostic features among species of *Schizobopyrina*. Species marked with (*) have the cephalon and pereomere 1 fused.

	Dorsolateral bosses	Coxal plates	Abdominal pleomeres and pleotelson (PT)	Pleomere V	Margin of pleomere V	Pleotelson margin
<i>S. amakusaensis</i> (*)	present	present	4 + PT	No indicated	No indicated	Rounded continuous
<i>S. andamica</i> (*)	present	present	5 + PT	Extending far beyond telson margin	Angular	Rounded continuous
<i>S. brachytelson</i> (*)	present	present	5 + PT	Extending far beyond telson margin	Angular	Straight continuous
<i>S. bruscai</i>	present	present	4 + PT	No indicated	No indicated	Bilobed
<i>S. cochinchensis</i>	indistinct	present	5 + PT	No extending far beyond telson margin	Rounded	Rounded continuous
<i>S. gracilis</i> (*)	absent	present	5 + PT	Extending far beyond telson margin	Rounded	Straight continuous
<i>S. kossmanni</i> (*)	present	present	5 + PT	Slightly extending far beyond telson margin	Angular	Rounded sinuous
<i>S. lobata</i> (*)	absent	absent	5 + PT	No extending far beyond telson margin	Rounded	Asymmetrical bilobed
<i>S. miyakei</i>	present	present	3 + PT 4 + PT	No indicated	No indicated	Obliquely continuous or asymmetrical bilobed
<i>S. platylobata</i>	present	present	5 + PT	Extending far beyond telson margin	Angular	Bilobed
<i>S. striata</i>	present	present	5 + PT	No extending far beyond telson margin	Rounded	Concave continuous
<i>S. urocaridis</i>	present	present	5 + PT	Slightly extending far beyond telson margin	Rounded	Widely rounded

infesting caridean shrimps (e.g., *Bopyrina*, Markham 1985; *Bopyrione*, Bourdon and Markham 1980) and should be included in the diagnosis of *Schizobopyrina*.

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